

**Notice of Allowability**

Application No.

10/090,975

Applicant(s)

GERHARD ET AL.

Examiner

Art Unit

ANH H DO

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_\_.
2. ☒ The allowed claim(s) is/are 1-16.
3. ☒ The drawings filed on 26 June 2002 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 3/5/02 & 5/23/03
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

  
**ANH HONG DO**  
**PRIMARY EXAMINER**

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

2. Claims 1-16 are allowed.

3. The following is an examiner's statement of reasons for allowance:

The present invention provides a new method and apparatus of analysis of schlieren, which do not depend on subjective decisions of an observer, therefore the determination of the schlieren by means of shadow information in this way is fast, simple and economical (specification, page 9, lines 17-21).

In particular, the new method and apparatus comprise the following features, which the prior art, taken either singly or in combination, does not teach:

- comparing the schlieren image contrast measured in the shadow image of the test sample with schlieren image contrast of a shadow image of a schlieren pattern of a comparison sample and evaluating the schlieren of the test sample by means of the comparing (see independent claims 1, 11, and 14).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANH H DO whose telephone number is 703-308-6720. The examiner can normally be reached on 5/4-9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID K MOORE can be reached on 703-308-7452. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

December 24, 2004.

  
**ANH HONG DO**  
**PRIMARY EXAMINER**

9. The method as defined in claim 3 or 4, wherein said optical materials each or said different material consists of crystalline material and said crystalline material is calcium fluoride or barium fluoride.

10. The method as defined in claim 1, wherein the electronic image receiving device is a digital camera.

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11. An apparatus<sup>of</sup> analysis of schlieren, said apparatus comprising:

means for irradiating a test sample with light from a light source, said means for irradiating including a sample holder and the light source;

means for producing a shadow image of the test sample on a projection screen, said means for producing the shadow image including the projection screen;

means for receiving the shadow image of the test sample projected on the projection screen in an electronic image receiving device;

means for processing the shadow image received in the electronic image receiving device to measure schlieren image contrast, said means for processing the shadow image being connected electronically with said means for receiving the shadow image;

means for comparing the measured schlieren image contrast measured in the shadow image of the test sample with schlieren image contrast of a shadow image of a schlieren pattern of a comparison sample and evaluating the schlieren of the test sample by means of the comparing.

## ABSTRACT OF THE DISCLOSURE

The method for evaluating schlieren in glassy or crystalline optical materials includes irradiating a test sample of the optical material with light and producing a shadow image of the test sample on a projection screen. The shadow image of the test sample is received in an electronic image receiving device, such as a digital camera, and is compared with another shadow image of schlieren obtained with a comparison sample by means of interferometry. Then the optical material of the test sample is evaluated with the help of the comparison results. ~~A suitable apparatus for performing this method is also described.~~

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